

3/3

Embodiment	Key Type	Identity Element	TA Element	Session Element	General Form
First	Encryption "Enc"	Q_{IDi} Public	R_{TAi} Public	r Private	$\prod t(R_{TAi} r Q_{IDi})$
	Decryption "Dec"	$\boxed{S_i}$ Private Q_{IDi} in S_i	$\boxed{s_i}$ in S_i	U Public	$t(U, \sum h S_i)$
Second	Encryption "gID"	Q_{IDi} Public	P_{pubi} Public	σ Private	$\prod \hat{e}(Q_{IDi}, P_{pubi})$
	Decryption "x"	$\boxed{d_{IDi}}$ Private Q_{IDi} in d_{IDi}	$\boxed{s_i}$ in d_{IDi}	U Public	$\hat{e}(\sum d_{IDi}, U)$
Third	Signature (compound)	d_{IDi} Private	P_{pubi} Public	z Private	$h \sum d_{IDi} + z \sum P_{pubi}$
	Verification (compound)	Q_{IDi} Public	P_{pubi}, U Public	U Public	$\prod \hat{e}(P_{pubi}, h Q_{IDi} + U)$
Fourth	Signature "e"	$\boxed{d_{IDi}}$ Private Q_{IDi} in d_{IDi}	$\boxed{s_i}$ in d_{IDi}	k Private	$\hat{e}(\sum d_{IDi}, P)$
	Verification "e"	Q_{IDi} Public	P_{pubi} Public	h, S Public	$\prod \hat{e}(Q_{IDi}, P_{pubi})$

Figure 3